

## MAMMOMAT *Novation*<sup>DR</sup>

**SP**

### Replacement of Parts

Assembly of the "Holding plate, left & right" on the detector;

Assembly of the grid movement slides (gliders)

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English

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All	All	01

## Document revision level

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## General remarks

- A) In some service cases for MAMMOMAT Novation *DR* Full-Field Digital Mammography systems the need may arise to disassemble / remove and subsequently to re-assemble the detector. On such an occasion the left and right holding plate will have to be removed from the defective detector, and subsequently mounted onto the replacement detector. The Allen bolts of correct size have to be unconditionally used.
- B) In some service cases on MAMMOMAT Novation *DR* Full-Field Digital Mammography systems the need may arise to disassemble and subsequently to re-assemble the reciprocating grid, and the slides (gliders). These mechanical parts are facilitating:
- 1) the reciprocating lateral movement to blur the grid, and
  - 2) the longitudinal shift, if the grid has to be dislodged because of magnification mode.

For the CSE problems may arise as to the sequence and as to the ways and means, how these pieces ought to be re-assembled.

Eventual mistakes in the assembly may contribute to higher wear and tear, even to jamming of this mechanism, thus increasing the danger of waggly movement, of bends and even of breakage. As a result grid lines may appear on images.

## 1) Mounting of the Holding brackets on the left and right side of the detector

The Teflon-like "Holding plate, left" and "Holding plate, right" have the material numbers 6636661 (left) and 6636679 (right), respectively. On both these plates the "Spring plate" 6659119 is installed.

Since approximately January 2005 these three material numbers are being delivered in their revision level 2. If, during service case, any of these parts are needed, all of them should be ordered. (The spring plate revision level 2 can only be mounted to holding plates revision level 2).

The spring plates, in their revision level 2, are supposed not only to lock the Grid angles solidly in place in their most proximal position, but also to slightly press them in this direction.

Each one of the two holding plates is /should be/ fastened to the detector by four (4) Allen-bolts, size **M6x10**, material number 3438918, and tightened with a torque of 4Nm. In cases when the detector must be replaced the Holding plates are usually removed from the defective detector, and mounted onto the newly delivered one.

<b>NOTE</b>
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<b>The holding plates should be mounted only after the detector has already been attached to the top plate.</b>
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When mounting the holding plates, the distance between the side aluminium rail and the holding plate should be 0,5 mm. In order to achieve this, a corresponding thickness gauge could be used. The Allen bolts should be tightened when the prescribed gap was adjusted.

**NOTICE**

In order to ensure that only bolts of the correct length (10 mm ! ) are used, each and every replacement detector (if delivered as spare part under the material number 8881307) is delivered with eight (8) extra bolts M6x10 / 3438918.

These bolts should be used to attach the holding plates; the bolts found in the other detector (at site) should be checked.

They should be discarded, if not exactly 10 mm of length.

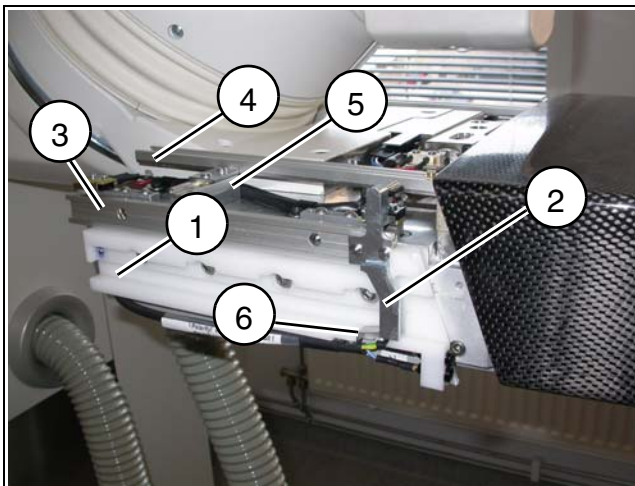
## 2) The fixation of the grid to the grid drive

The grid is being fixed to the grid drive by the "**Grid bracket, left**" 6636703 and the "**Grid bracket, right**" 6636711.

In both these brackets the "**Synthetic sleeve bearing, 3x4x6**" 7061351 has to be pushed in, as far as it will go.

There are two "**Slide, NW-02-17 LL**" material number 6634278 to which the two Grid brackets have to be bolted. The use of two bolts, size "**Bolt M3x5mm, DIN 921-12**" 6030282 is prescribed for each side, the use of washers is not necessary. All these bolts M3x5 have to be tightened by 0.5 Nm torque.

The Slides 6634278 run in two longitudinal aluminium rails. These slides can be recognized on a small hole with a diameter of approximately 1mm in their centre, (the sign "LL" denotes their feature of "less tight fitting").



## Legend:

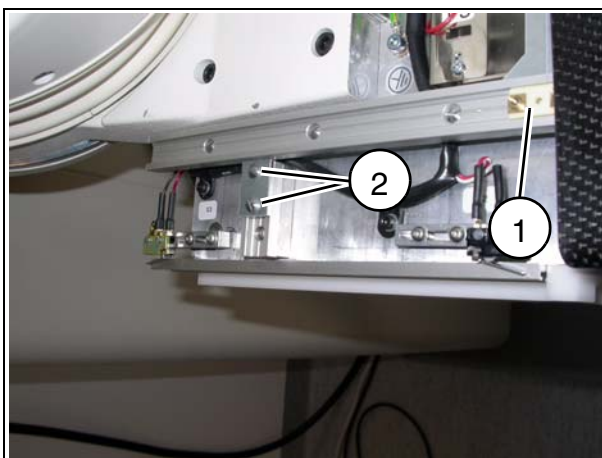
- ① : Holding plate, left
- ② : Grid angle, left
- ③ : Longitudinal side rail, left
- ④ : Longitudinal upper rail, left
- ⑤ : Transversal rail, left
- ⑥ : Spring plate

Fig. 1

## 3) The fixation of the two longitudinal aluminium rails

On the near (front) side, the two longitudinal aluminium rails are fastened to a transversal bracket. This transversal bracket is driven by a cam-cylinder of the grid motor.

On the far side, the **left** longitudinal aluminium rail is bolted to the “**Slide NW-02-17**” **6634260** (running in a short transverse rail 6622737) by two bolts 6030282 with “**Washer A3,2 DIN125-ST6980**” **3341807**, whereas the Slide 6634260 itself can be recognized on **not having** a small hole of approximately 1mm diameter in its centre.



## Legend:

- ① : Slide NW-02-17 LL
- ② : Washer 3.2

Fig. 2

On the far side, the **right** longitudinal aluminium rail is bolted to the "Slide, NW-02-17 LL" 6634278 (running in a short transverse rail 6622737) similarly by two bolts 6030282 with "Washer A3,2 DIN125-ST6980" material number 3341807.

#### 4) The fixation of the two grid angle brackets:

There are two aluminium rails fastened on the left and on the right side of the so called "Top plate" 6622877, carrying/holding the detector. (These rails are above the Teflon-like "Holding plate, left" and "Holding plate, right".)

Into each of these rails one piece "Slide NW-02-17" 6634260 has to be inserted. On the left side the "**Grid angle, left**" **6636687**, on the right side the "**Grid angle, right**" **6636695** has to be fastened to the slide by means of two bolts 6030232 each, without washers.

When both grid angles got fixed the gap between the grid brackets and grid angles in both, left and right limit position has to be checked. The permissible tolerance is 1 mm +/- 0.1 mm.

Move the grid, therefor the longitudinal rails to the extreme left and to the extreme right, check the tolerance with a Vernier calliper. At the same time check when does the switch S1 get actuated by the cam wheel. If the S1 switches too early, or too late, adjust the position of the cam wheel by means of the grub screw (see Fig. 5)

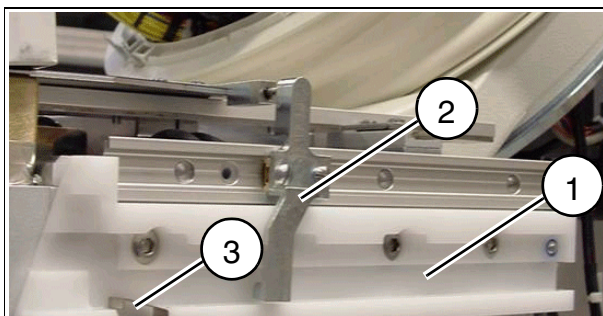


Fig. 3

#### Legend:

- ① : Holding plate, right
- ② : Grid angle, right
- ③ : Spring plate

#### 5) Do not loosen the aluminium rails

As can be seen in the description above, there are three pairs of aluminium rails facilitating different movements of the grid:

- a) two **longitudinal rails on the upper side of the top plate**; (the top plate supports the FFDM detector).



- b) two **short transversal rails** on the upper side, actually in the left and right far corners of the top plate, and
- c) two **longitudinal rails** on the left and right side of the top plate.

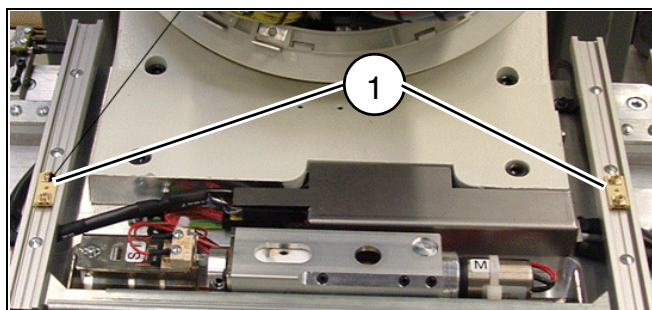


Fig. 4

Legend:

- ① : Longitudinal rails with the "Slide" 66 34 278 (with hole)

The parallel position of the first four rails in a horizontal plane, and the position of the other two rails in planes perpendicular to that is very accurately adjusted in the factory with the help of a special tool.

There is no need, and there is also no reason to loosen their fixing screws. Adjustment in the field is not necessary or desired.

**NOTICE**

**Therefore, these six rails shouldn't be loosened!!**

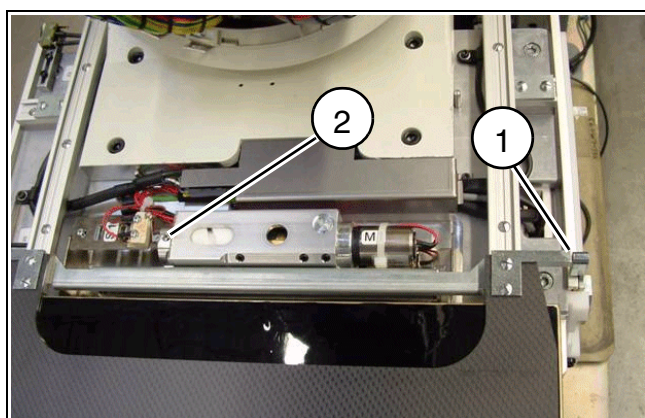


Fig. 5

Legend:

- ① : Tolerance between the grid angle and the grid bracket = 1mm +/- 0.1 mm
- ② : Grub screw

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